In particular, measurements made by different instruments passing overhead at different times have been instrumental in studying the creation and evolution of dust plumes over time. A comprehensive understanding of the properties of these tiny particles as well as their temporal and spatial distribution is imperative to understanding how the Earth's atmosphere maintains its current state of equilibrium and how anthropogenic activities could potentially destroy that balance.

Dust storms frequently occur over places like northern Africa and southwest Asia all year round. Extensive dust clouds were observed from space over Iraq, Syria, and Kuwait, as well as over the Persian Gulf on August 7, 2005 (top panel). The corresponding intensity of the dust plume is also depicted using a quantity called 'optical thickness' (bottom panel). The higher the dust optical thickness, the more dust in the atmosphere. (Data from the MODIS instrument on the Aqua satellite.)



